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10/601,030	06/20/2003	Kelvin S. Vartti	RA 5482	7121

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EXAMINER	
PEUGH, BRIAN R	
ART UNIT	**PAPER NUMBER**
2187	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/601,030	VARTTI ET AL.	
	Examiner	Art Unit	
	Brian R. Peugh	2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/20/05*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-6,12-16,19-24,29-32 and 34-36* is/are rejected.

7)☒ Claim(s) *3,7-11,17,18,25-28,33 and 37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This Office Action is in response to applicant's communication filed October 20, 2005 in response to PTO Office Action dated July 15, 2005. The applicant's remarks and amendment to the specification and/or claims were considered with the results that follow.

Claims 1-37 have been presented for examination in this application. In response to the last Office Action, claims 1, 12, 14, 20, 24, 29, and 34 have been amended.

Claim Objections

Claims 14-19 objected to because of the following informalities:

Regarding claim 14, line 6: Insert –any-- before "linked" in order to facilitate proper antecedent basis.

Claims 15-19 are objected to as being dependent upon a previously objected claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4-6, 12-16, 19-24, 29-32, and 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Haupt et al. (US# 6,434,641).

Regarding claim 1, Haupt et al. teaches **for use in a system having multiple processors in a processing node** [POD (12) is interpreted as the processing node as claimed] **coupled to a memory** [Fig. 1], **a method, comprising: a.) receiving multiple requests for data from the multiple processors; b.) if ones of the multiple requests are requesting the same data, creating a respective linked list to record the ones of the multiple requests; and c.) issuing one of the requests recorded by each linked list from the processing node to the memory** [col. 17, lines 12-17; col. 19, lines 48-50 & 27-32].

Regarding claim 2, Haupt et al. teaches **wherein each linked list orders requests in order of receipt, and wherein the issued request is the oldest pending request** [col. 19, lines 23-32].

Regarding claim 4, Haupt et al. teaches **receiving requested data from the memory; if the received data was requested by requests recorded in a linked list, providing the received data to a processor that issued a predetermined one of the requests included in the linked list; removing the predetermined request from the linked list; and processing all requests remaining in the linked list** [col. 19, line 48 – col. 20, line 8].

Regarding claim 5, Haupt et al. teaches **wherein the predetermined request is the oldest-pending request in the linked list** [col. 12, lines 50-53].

Regarding claim 6, Haupt et al. teaches **wherein the processing step includes: making the next request in the linked list the current request; requesting return of the received data from whichever one of the multiple processors last retained the data; providing the received data to whichever one of the multiple processors is indicated by the current request; and removing the current request from the linked list** [col. 17, lines 10-34; see also col. 9, lines 35-42 for return operation description].

Regarding claim 12, Haupt et al. teaches **a method for processing requests from requesters to a memory including: a.) receiving a request for data stored in a memory; b.) if the request is requesting the same data as another pending request that has not yet been provided from the requesters to the memory, linking the request to the other pending request; and c.) repeating steps a.) and b.) for any additional requests issued to the memory** [col. 17, lines 12-17;col. 19, lines 48-50 & 27-32].

Regarding claim 13, Haupt et al. teaches **wherein steps a.) through c.) include creating multiple linked lists of requests, each respectively associated with different data** [col. 19, lines 23-32].

Regarding claim 14, Haupt et al. teaches **d.) when data for the pending request is received from the memory, providing the data to a requester that issued the pending request; and e.) if the pending request is linked to any other request, requesting that the data be returned by a requester indicated by the pending request so that the other linked request may be processed.** [col. 17, lines 10-34; see also col. 9, lines 35-42 for return operation description].

Regarding claim 15, Haupt et al. teaches **f.) providing the data to satisfy the linked request** [col. 19, lines 50-56].

Regarding claim 16, Haupt et al. teaches **further including: g.) making the linked request the current request; h.) if the current request is linked to a request, requesting that the data be returned by a requester that most recently retained the data; i.) providing returned data to satisfy the linked request; and j.) repeating steps g.) through i.) for any additional requests in the linked list** [col. 19, line 48 – col. 20, line 8].

Regarding claim 19, Haupt et al. teaches **wherein at least one of steps e.) and h.) is performed in a manner that is determined programmably** [return operations are programmed to initiate the defer CAM logic (702) operations; col. 17, lines 24-34].

Regarding claim 20, Haupt et al. teaches **a system for processing requests to a memory, comprising: multiple requesters to issue requests for data** [col. 17, lines12-17]; **a request tracking circuit** [MSU 110 contains CAM 702] **coupled to the multiple requesters to retain a record of each request until the request is completed, and to associate a request with any other one or more requests for the same data so that a single request for any given data is provided from the multiple requesters to the memory at a given time** [col. 19, lines 48-50 & 27-32].

Regarding claim 21, Haupt et al. teaches **wherein the request tracking circuit includes a storage device to store multiple requests for the same data in a respective linked list of requests** [Defer CAM Logic (622) contains CAM 702].

Regarding claim 22, Haupt et al. teaches **wherein the request tracking circuit includes a control circuit to receive data from the memory, and to provide the received data to one of the multiple requesters based on information stored within the storage device** [col. 6, lines 25-29].

Regarding claim 23, Haupt et al. teaches **wherein if the received data is received in response to a request that has been associated with other requests, the control circuit provides the received data to whichever requester issued the oldest one of the associated requests, and processes each of the other associated requests in the order in which the other associated requests were recorded by the request tracking circuit** [col. 19, lines 48-56 & 27-32].

Regarding claim 24, Haupt et al. teaches **wherein the control circuit includes circuits to process each of the other associated requests by attempting to obtain the received data from one of the multiple requesters, then providing any obtained data to a requester that is identified by the request that is being processed** [col. 17, lines 10-34; see also col. 9, lines 35-42 for return operation description].

Regarding claim 29, Haupt et al. teaches **a data processing system comprising: a memory** [235] **a processing node** [250] **coupled to the memory and having one or more requesters to generate requests** [col. 17, lines 12-17] **for data**

to the memory, wherein the processing node includes a requesting tracking circuit [520] **to record, in time-order, requests issued for the same data, and to allow only one of the requests** [oldest request] **for the same data from being issued to the memory at a given time** [col. 19, line 48- col. 20, line 8; col. 19, lines 28-30].

Regarding claim 30, Haupt et al. teaches **wherein the processing node includes multiple processors** [510; col. 10, lines 28-37], **and wherein the requesting tracking circuit includes** (comprises) **a control circuit to receive data returned from the memory, the control circuit to provide the data to the processor associated with the oldest request pending for the data** [col. 15, lines 28-42].

Regarding claim 31, Haupt et al. teaches **wherein the control circuit includes a circuit** [622] **to determine whether other requests are pending for the received data, and for each of the other pending requests, attempting to obtain the data from whichever of the multiple processors last retained the data, then providing any obtained data to a processor that is associated with the request being processed** [col. 17, lines 10-34; see also col. 9, lines 35-42 for return operation description].

Regarding claim 32, Haupt et al. teaches wherein the control circuit processes the multiple requests for the received data in an order in which the multiple requests were received [col. 19, lines 23-32].

Regarding claim 34, Haupt et al. teaches **a system for processing requests to a memory, including: processing means** [120] **for originating the requests to the memory; and request tracking means for receiving the requests, and for forming an association between any of the requests that are requesting the same data, and for allowing only one of the associated requests to be provided from the processing means to the memory** [col. 17, lines 12-17; col. 19, lines 48-50 & 27-32].

Regarding claim 35, Haupt et al. teaches **wherein the association records an order of receipt of the requests that are requesting the same data** [col. 19, lines 23-32].

Regarding claim 36, Haupt et al. teaches **wherein the request tracking means includes control means for receiving data from the memory, and if the received data was requested by associated requests that are requesting the same data, for processing each of the associated requests in the order in which the requests were received** [col. 15, lines 28-42; col. 19, lines 48-53].

Allowable Subject Matter

Claims 3, 7-11, 17, 18, 25-28, 33, and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1, 2, 4-6, 12-16, 19-24, 29-32, and 34-36 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Peugh whose telephone number is (571) 272-4199. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm. The examiner can also be reached on alternate Friday's from 7:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks, can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian R. Peugh
Primary Examiner
Art Unit 2187
December 22, 2005